

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket Nos. 50-247-LR
	)	and
	)	50-286-LR
ENTERGY NUCLEAR OPERATIONS, INC.	)	
(Indian Point Nuclear Generating Units 2 and 3)	)	
	)	June 28, 2012

**REBUTTAL TESTIMONY OF MANNA JO GREENE REGARDING  
CLEARWATER'S ENVIRONMENTAL JUSTICE CONTENTION EC-3A**

**Q:1 Please state your name and employment.**

A. My name is Manna Jo Greene. I work at Hudson Sloop Clearwater, 724 Wolcott Avenue, Beacon, NY 12508.

**Q:2 Did you provide opening testimony in this matter?**

A:2 Yes. My initial testimony summarizes my expertise and role .

**Q:3 Entergy contends that Clearwater's testimony is beyond the scope of this contention because it includes evidence about the elderly, disabled, children, and people without cars. Do these populations fall outside the scope of Clearwater's Contention EC-3A?**

A:3 No. Clearwater's testimony does not stray from the scope of this contention. Clearwater's Contention EC-3A is not limited to institutionalized EJ populations and has been reviewed by the Atomic Safety and Licensing Board to justifiably include "other EJ populations within 50 miles of Indian Point in pre-schools, nursing homes, shelters, hospitals, and minority and low-income residents in the region who lack access to private transportation." By confirming the significance and validity of this addition to the original EJ contention the Board substantiated Clearwater's claim that the EJ contention does not challenge the adequacy of emergency planning, but only seeks to emphasize the disparate context in which vulnerable EJ populations would find themselves while emergency during a severe accident.

Notably, even the NRC has stated “(a)nyone without full access to, or protection from, the decision making process is conceivably an environmental justice constituent.” CLE000051 at 4. The Staff stated that obvious EJ populations are the poor, minority populations, subsistence resource users, and Native Americans. *Id.* at 3. However, the Staff also included “the (e)lderly and those on fixed incomes” and “people with special needs.” *Id.* at 4. These statements show that Entergy’s attempt to exclude the elderly and disabled from the EJ population is mistaken.

For the populations discussed in Clearwater’s initial testimony, geographic proximity to Indian Point combined with a deficiency in personal resources, physical or mental capacity, the availability of transit opportunities and stocks and knowledge of appropriate shelter-in-place supplies illustrate clear disparate impacts when compared to the general population within the 50-mile radius of Indian Point. I am not defining problems of emergency planning, but rather problems relating to the potential disparate health and social effects specific to EJ populations that would occur during proposed emergency planning procedures. The environmental peculiarities present in the context of each daycare center, Headstart program, nursing home, hospital, assisted living, adult care and rehabilitation center, homeless shelter, affordable housing unit, emergency service, and jail would place disproportionate impacts on the well-being of the predominantly minority and low-income populations that reside there if a severe accident were to occur.

**Q:4 Ms. Greene, have you recently attended a presentation on Emergency Planning related to Indian Point?**

A:4 Yes, I have.

**Q:5 When and where did you view this presentation?**

A:5 I attended the Eyewitness Fukushima: Emergency Responders Conference on March 5, 2012 at Manhattanville College.

**Q:6 Do any of the comments made by any of the presenters who spoke at the Conference relate to Clearwater's Environmental Justice Contention EC-3A?**

A:6 Yes. I found Dr. Irwin Redlener's comments to be particularly powerful and compelling and relevant to the contention.

**Q:7 Who is Dr. Irwin Redlener?**

A: 7 Dr. Redlener is the Director of the National Center for Disaster Preparedness and is a professor at Columbia University's Mailman School of Public Health.

**Q:8 How did Dr. Redlener organize his presentation?**

A:8 Dr. Redlener used a PowerPoint presentation that outlined five key points.

**Q:9 What were those five points?**

A:9 The five points were:

- 1) Will Expectation be Orchestrated or Spontaneous Evacuation?
- 2) Every evacuation is a public health challenge/crisis
- 3) Pre-disaster vulnerabilities represent critical variables
- 4) Host Community Needs Must be Accounted for (and Resourced)
- 5) Competency of Evacuation Planning Cannot be "Out of Scope" in Evaluating Relicensing of Nuclear Power Plants

**Q:10 To the best of your recollection, could you describe some of Dr. Redlener's comments on the issue of spontaneous or shadow evacuation?**

A:10 Yes. Dr. Redlener believed that while there would be some government organized and executed evacuation procedures and protocols, the vast majority of people would attempt to evacuate on their own. Moreover, he is unsure about the success of the government's orchestrated planning mechanisms because most individuals will be attempting to flee from the evacuation zones on their own accord in a sporadic and spontaneous manner. Dr. Redlener also stated that such an exodus from the Indian Point area would involve spontaneous movement to up to eight neighboring states if the evacuees could reach them. This, he said, brings to question how long they will have to stay and when they will be able to return.

**Q:11 Please describe Dr. Redlener's comments on the public health issues?**

A:11. Dr. Redlener distinguishes a radiological event from other tragedies such as Hurricane Katrina or a chemical spill in that in non-radiological emergencies those who flee the area are generally able to return after some time has passed and the site is cleaned up. Unfortunately, this is not the case in a radiological accident where no one can be sure for how long evacuees may be forced from their homes. Dr. Redlener indicated that this created an experience that he described as the "end of normalcy" because the evacuees would be forced from their homes and communities, where they may become separated from loved ones, possessions and pets, with very little idea of when they might be able to be reunited. These events in and of themselves create psychological and emotional trauma for evacuees. In addition, Dr. Redlener describes that there would be acute evacuation trauma because he predicts the occurrence of motor vehicle accidents along major routes of egress such as highways, for an extended period of time. Furthermore, just because these individuals would be fleeing from the area does not mean that there would not be noticeable events: illnesses such as diabetes or asthma attacks, where evacuees would run out of their prescribed treatments with no ability to renew their supplies for an indefinite duration.

**Q:12 Please describe Dr. Redlener's comments on the importance of identifying pre-disaster vulnerabilities?**

A:12 Dr. Redlener made it clear that there are many individuals within the communities surrounding Indian Point that would be especially vulnerable during a severe accident. For example, children, the elderly and disabled populations would not just need routine evacuation measures to provide them with a safe route out of the area, but they would need additional services to accommodate their special needs.

**Q:13 Please describe Dr. Redlener's comments on host community needs?**

A:13 Dr. Redlener also spoke of the municipalities that would be described as "host communities" in an event of emergency evacuation procedures. These locales would have to accommodate the many evacuees that would be fleeing from the area. As he discussed earlier, because much of the evacuation would occur in a spontaneous manner, there are many towns, villages, or cities that might become host communities. He questioned the ability of any such host community to be adequately prepared for the tremendous numbers of evacuees that may be very frightened, injured, and confused and who would need to draw upon any supplies and daily living necessities from these areas.

**Q:14 Please describe Dr. Redlener's comments on the need to consider evacuation during relicensing?**

A:14 Dr. Redlener believes that only looking at the mechanical failures and the operational vulnerabilities of the plant is not sufficient in undergoing a comprehensive evaluation to relicense a nuclear plant. He asserted that if a community does not have adequate emergency plans and is not ready for the types of impacts he cited under the previous topics then that community is not ready for nuclear power.

**Q:15 Aside from these five topic areas, did Dr. Redlener speak to any questions posed by audience members?**

A:15 Yes. The Conference was organized to allow for a question and answer period from the audience. However, before questions were posed, Dr. Redlener made a couple statements in concurrence with Andrew Spano's comment on safety precautions.

**Q:16 Who is Andrew Spano?**

A:16 Mr. Spano is the former County Executive for Westchester County. Indian Point Nuclear Complex is located in Westchester County, and as a result, Andy Spano directly participated in, and was ultimately responsible for, Emergency Planning and Response for Westchester County for twelve years.

**Q:17 What did Dr. Redlener suggest in his comments on Mr. Spano's remarks?**

A:17 Specifically, Dr. Redlener stated, "I agree with Mr. Spano. This is (...) nothing to do with Nuclear Power, except that the consequences of a problem are so devastating in such a densely populated area that I think we have a moral, ethical obligation to make sure we have solutions that are viable before allowing such a dangerous thing. It's like having, you know, a Pit Bull that's pretty well trained when you're walking down the street, but, you know, what if it's not, kind of thing. So we've got to deal with it."

**Q:18 Did Dr. Redlener field any questions from the audience?**

A:18 Yes. One question that was posed asked, "How can we keep the system from breaking down when emergency services aren't able to respond to us in a large enough fashion or quick enough for such an event as a nuclear disaster?" Dr. Redlener responded, "The fact that the evacuation plan inadequacy is out of scope is an absurdity (...) There is a limit to what you can do as an individual; that is why we have government. Because in a big meltdown, and you can't leave because every single roadway is clogged and (...) people have medical problems all over the place. Unless you have a personal helicopter you're trapped."

**Q.19 How is this relevant to Clearwater's Environmental Justice contention EC-3A?**

A.19 If people with cars are disadvantaged compared to those who can afford a personal helicopter, people who cannot afford cars and are dependent on public transportation are at an even greater disadvantage because they have to wait at open air bus stops for transport to arrive. People with impaired mobility who may not even be able to walk to the bus stop or take extra time to get there are yet more disadvantaged. Similarly, those who need regular treatment or medication may suffer disproportionately in a chaotic evacuation. Those who cannot understand enough English to comprehend instructions may also be at a major disadvantage.

**Q:20 Are you prepared to make available a complete transcript of Dr. Redlener's presentation, if requested by the ASLB Judges, or any of the Parties involved in this Contention?**

A:20 Yes, if necessary Clearwater will provide a copy of the raw video footage, or will have a transcript prepared.

**Q:21 Entergy asserts that you lack the requisite expertise in designing, conducting, or extrapolating data from interviews, nor do you have the knowledge required to interpret interview results. Do the interviews conducted in this case provide useful insight into the local situation?**

A:21 Yes. While I may not have a professional background in quantitative survey analysis, the data gathered by Clearwater provides credible testimony and the best understanding available of the potential for disparate impacts EJ populations. Notably, Entergy and the NRC Staff have not done any on-the-ground work to see what their computer-based analysis missed and have no basis to assert that our results are not reliable. We conducted the interviews using a template questionnaire for our survey. The questions we used were straightforward and include many sub-inquiries intended to be answered with simple "yes" or "no" responses. Therefore, the results from the surveys we conducted are reliable.

**Q:22 Do you have much experience in communicating with others in order to appropriately convey each question to the interviewee and to develop an atmosphere conducive to honest responses and focused attention?**

A: 22 Yes. My background contains considerable professional experience in leadership roles that require effective communication. For example, as the Recycling Coordinator for the Town of New Paltz and SUNY New Paltz, I engaged in the development of public education and outreach through the creation of recycling instructions and promotional materials resulting in one of the most comprehensive curbside and drop-off recycling programs in Ulster County. Additionally, I worked as the Recycling Coordinator/Educator for the Ulster County Resource Recovery Agency. Here, I had to engage in inter-municipal communication amongst the 21

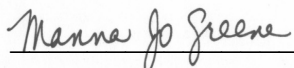
individual municipal recycling coordinators throughout the County to effectively administer waste reduction and recycling education efforts. Finally, in my current position as the Environmental Director at Clearwater, I have become experienced in networking and outreach between the many varied stakeholders that work and live throughout the Hudson Valley region.

In fact, the numerous panels, task forces, campaigns, coalitions, management councils, and networks I have participated in and, in some cases helped found, defines me as a professional communicator. I have also helped found and actively participate in the Poughkeepsie-based Jobs Not Jail grassroots organization and regularly speak about my experience in the Civil Rights Movement to incarcerated offenders in correctional facilities throughout the Mid-Hudson region through the Bard Prison Initiative. These experiences have enhanced my communication skills. Finally, I have completed ten years of Landmark Education training, which stresses effective communication.

**Q23. In accordance with 28 U.S.C. § 1746, do you state under penalty of perjury that the foregoing testimony is true and correct?**

A23. Yes.

Executed in accord with 10 C.F.R. § 2.304(d)

  
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Manna Jo Greene

Hudson River Sloop Clearwater, Inc.  
724 Wolcott Avenue,  
Beacon, NY 12508  
(845) 265-8080 x 7113